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Sang-Ho Kim

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CHA & REITER, LLC

210 ROUTE 4 EAST STE 103

PARAMUS, NJ 07652

EXAMINER

MARANDI, JAMES R

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's remarks filed on 4/8/2008 have been fully considered.
  - In light of applicant's amendments, rejections of claims 1-2 under 35 USC § 101 is hereby withdrawn.
  - In light of applicant's amendment, rejection of claim 1 under 35 USC § 112, first paragraph, lack of enablement, is withdrawn.

Applicant's arguments with respect to claims 1 and 5 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

2. Claim 3 is objected to because of the following informalities:
  - Under ONU Comprising, 1<sup>st</sup> line, "for converting signals output signals ..."  
appears to be a typographical error and should read "for converting output signals...".

- The last step as reflected in claim 1 appears to be "wherein the OLT outputting.....". The Examiner believes this is typographical error as this step is performed by the OLT before passing the information to the ONU. Therefore, it should appear before the heading "an Optical Network Unit (ONU) comprising".

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being vague and indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim recites **OLT for converting digital broadcasting data received from a plurality of service providers without modulation into optical signals** and then recites ONU converting these un-modulated non-optical signals into **electrical signals**, which is vague.

In order to expedite prosecution, the examiner has interpreted this claim as assigning ATM VCIs per broadcasting channel and passing said VCIs, along with ATM frames, from the OLT to ONU unmolested.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: ***(See MPEP Ch. 2141)***

- a. Determining the scope and contents of the prior art;
- b. Ascertaining the differences between the prior art and the claims in issue;
- c. Resolving the level of ordinary skill in the pertinent art; and
- d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over N.

Terada et al., "an MPEG2- Based Digital CATV and VOD system using ATM-PON Architecture", IEEE Proceedings of Multimedia, 1996 (hereinafter "Terada") in view of D. Pecorella, "Video-Distribution Markets Look to ATM Technology as Transport Vehicle", Lightwave, June 2000.

Regarding claim 1, 3, and 5 Terada discloses a method, process, system, and network: **for providing broadcasting services** (Fig. 3-1), **comprising:**

**an Optical Line Termination (OLT) (SLT) for receiving Single Program Transport Streams (STPS) from a plurality of broadcasting service providers (CATV Provider), converting the SPTSs into a plurality of asynchronous transfer mode (ATM) cells and assigning a virtual channel identifier (VCI) to each of the ATM cells** (Section 4.1); **and**

**an Optical Network Unit (ONU) (Fig. 3) comprising:**

**an ATM cell conversion section for converting signals output signals from the OLT into an ATM format and for outputting at least one broadcasting channel data from each ATM cell** (section 3.2);

**a switch (Ch. SEL) for switching each digital broadcasting data output from the ATM cell conversion section to a subscriber** (Fig. 2-2, Sec. 2.1 last 4 lines, Sec. 3.2, last two paragraphs); **and**

**a control section for receiving header information in the ATM cell** (each VCI in ATM header is associated with a unique program, Sec. 4.1) **from the ATM cell conversion section, for receiving a desired broadcasting channel from the subscriber** (Channel Selection Control in Set Top Box), **and for controlling the switch so that channel data outputted from the ATM cell conversion section can be corresponded to the channel desired by the subscriber** (Fig. 2-2, Sec. 2.1 last 4 lines, Sec. 3.2, last two paragraphs);

**wherein the OLT outputting a VCI frame to the ONU comprising the** (ATM communications between ATM nodes has VCI header, also shown in Figs 3-2, and 3-3) **header information and a payload portion of the converted SPTS.**

Terada does not explicitly disclose processing **single-channel multiple program transport streams (MPTSs)** as well as SPTS. However, Pecorella, in an analogous art, substantially discloses an ATM edge device capable of processing single channel MPTS streams (Fig.3, Page 4 and 5, 4th paragraph under heading Broadband world meets network world).

Therefore, it would have been obvious to one of ordinary skills in the art, at the time of invention, to modify Terada's system with Pecorella's teaching in order to provide a solution for cable providers to seamlessly migrate/ support packet based systems.

Regarding claims 2, and 4, **wherein the header information includes an ATM VCI field representing a communication path of a corresponding ATM cell** (this how ATM operates. Without a VCI the ATM cell would not know how to route itself), **and a channel information field containing broadcasting station information** (this is part of MPEG standard) **corresponding to PID information of each broadcasting channel field included in a payload portion of the**

**ATM cell** (section 4.1).

Claim 6 is rejected as claim 1 as we have already analyzed **wherein the digital broadcasting data from the plurality of service providers are in the form of single-channel MPTSs (multiple program transport streams).**

Regarding claim 7, **wherein the single-channel MPTS comprises at least one header and at least one channel data.** MPTS always have header and channel data.

Claim 8 is rejected by the same analysis as claim 2.

Regarding claim 9, **wherein the broadcasting channel field includes a MPEG data field having digital broadcasting data (payload in MPEG standard) and a PID information field having channel information (per MPEG standard).**

Regarding claim 10, **wherein the output of the OLT is transmitted to the ONU via an optical fiber** (two optical devices must talk optical, and in Cable/ Telco infrastructure it is always fiber).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Contacts***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES R. MARANDI whose telephone number is (571)270-1843. The examiner can normally be reached on 8:00 AM- 5:00 PM M-F, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher C. Grant can be reached on (571) 272-7294. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

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/James R. Marandi/

/Christopher Grant/  
Supervisory Patent Examiner, Art Unit 2623